June Mixed Waste Subgroup Highlights

The Hanford STCG Mixed Waste (MW) Subgroup met on June 11, 1998. Ron Goles (PNNL) gave a viewgraph presentation on the DC Arc Furnace Testing Project. This work was funded over the last five years by the MW Focus Area (MWFA). This fiscal year is the last of this project. A demonstration was just completed using PANTEX weapon components. In addition to the PANTEX classified/radioactive weapon components, other difficult-to-treat mixed waste being tested include INEEL's subsurface disposal area waste and SRS job control materials. The subsurface disposal area waste is a heterogeneous mix of non-aqueous materials. These materials include lab equipment, process equipment, maintenance equipment and other miscellaneous materials. There is no preprocessing required to treat these materials in the DC arc furnace. There are openings to drop canisters and drums into the furnace. The benefits of using the DC arc furnace over an incinerator include the lower off-gas volumes, lower volatization of heavy metals, and the immobilization of the hazardous metals in the glass/slag product. In addition, there is much less public scrutiny of the DC arc furnace compared to an incinerator. The benefits of using the DC arc furnace over joule-heated furnaces include higher processing temperatures and higher processing rates for a given furnace size. The benefits of the DC arc furnace over plasma-treated furnaces include lower volatilization of heavy metals, more energy-efficient, safer/easier remote operations, and no requirement to frequently shut down for torch replacement. Some of the incentives for treatment of waste using the DC arc furnace include destruction of organics to levels that will allow TRUPACT shipments, reduction in waste volume and disposal costs, destruction or immobilization of hazardous constituents so certain waste can be removed from the "mixed" category, reduction in the need to pretreat (or characterize) waste, and declassification/demilitarization of weapons components.

As part of the DC arc furnace project a non-rad, bench-scale furnace was constructed and tested. Then an engineering-scale system was constructed and operated to treat rad waste. PANTEX neutron generators containing lead and tritium were recently processed. Tritium was released as a gas, but the amount was below regulatory levels. SRS is looking at this system to get rid of organics in waste that will be shipped to WIPP in TRUPACT containers.

Norm Olson updated the subgroup on the effort to put together the Science and Technology needs for FY99. There are 13 technology needs being prepared so far with more to be added. The needs will be tied to the disposition map that the MWFA is putting together. Needs from the liquid effluents and 200 Area labs will also be added to this year's needs list. A need for tritium removal from wastewater is one being examined now. Discussion with a tritium group are underway to ascertain the state-of-the-art for tritium removal. There will also be six science needs this year. No in-depth examination of science needs is planned so the six science needs from last will be sent in again.

One proposal was submitted to the Accelerated Site Technology Deployment Program that concerns Hanford mixed waste. The proposal, entitled "Hanford Deployment of Rapid PCB Screening Technology", was distributed and discussed by Norm Olson. This proposal deals with reducing the cost and time of identifying PCB in the K-Basin sludge waste and the tank waste sent to the private vitrification plant. A private company is working to develop a field test kit for PCB

analysis and the $100K of EM-50 money would be leveraged with EM-30 funds to speed up the deployment of this new test kit in FY99.

Larbi Bounini discussed two proposals he is working on to be sent to the MWFA for funding. The first deals with a technology to differentiate TRU from non-TRU for boxed waste. He will be discussing this with the MWFA next week. After that discussion he will be working with WIPP and DOE-HQ to put the proposal together. This would be in support of shipments to WIPP from the WRAP facility. Larbi is trying to get the proposal to the MWFA by the end of July. Larbi is also working on determining the requirements of one of our top needs from last year. This need was to remotely characterize long-length equipment so as to distinguish TRU from non-TRU portions of the waste. The MWFA has set aside $500K to help with meeting this need. Once our requirements are more defined, we will work with the MWFA to develop a proposal and scope of work. Larbi hopes to have the requirements write-up completed by the end of June. There was a meeting of the MWFA end-user steering committee on May 20 at which the product lines were reviewed. The results of the meeting were sent to Gary Ballew, who will send me a copy to make for all subgroup members.

The next meeting of the MW Subgroup will be on July 9 at 1:00 p.m. The focus of the meeting will be to review the S&T needs for FY99. Norm Olson will send me the draft needs and I will distribute them to all subgroup members before the meeting.

Mixed Waste Subgroup Meeting Attendees - 6/11/98

Ted Anderson	BHI	372-9343
John April	BHI	372-9126
Gary Ballew	PREC	946-0611
Greg Berlin	FDH-TM	372-4352
Bill Bonner	PNNL	372-6263
Larbi Bounini	WMH	376-4650
Craig Cameron	EPA	376-8558
Ellen Dagan	DOE-RL	376-3811
Ron Goles	PNNL	376-2030
Norm Olson	FDH-TM	372-4810
Steve Weakley	PNNL	372-4275